Caribou/Targhee National Forest

IFPA Best Management Practices Review

1990 to 2004

Caribou/Targhee BMP Reviews

- Since 1990, twenty four timber sales have been reviewed by the Forest

Caribou/Targhee BMP Review

- Purpose – Determine how BMPs were addressed throughout the timber sale planning process and applied on-the-ground
- Issue and Concerns Identification
- Protection and mitigation requirements
- On-the-Ground Implementation
- Effectiveness in maintaining aquatic resources

Multi-Disciplinary Team

- Forest Personnel
  - Hydrologist, Soil Scientist, Timber Program Manager, Staff Officer, District Ranger, Sale Administrator, Engineer
- State of Idaho
  - Department of Lands, Department of Environmental Quality, Fish and Game, Department of Water Resources
- Others
  - Timber Purchaser/Operator, Greater Yellowstone Coalition, Other interested individuals

Silvicultural Nonpoint Source Task Force Field Form

September 21, 2004

SILVICULTURAL NONPOINT SOURCE TASK FORCE FIELD FORM

Project Identification

Name: Upper Dry Canyon Audit No: 9/21/04

Federal (X) State ( ) Private Industrial ( ) Private Non-Industrial ( )

Owner: USFS

Operator: Kelly Jensen / Blane Wilcox

Project Location (attach map)

Ecoregion: _____

FPA Region: North ( ) South (X) County: Caribou

Legal Description: Township 9S Range 43E

Section(s) 22, 23, 26, 27, 35

Physical Environment

Elevation (ft or m): Mean 7800 ft. Range 7800 - 8000

Climate: Annual Precipitation (in or cm) 25-30 inches

Preceding Conditions wet snow storm 1-2 days prior

Slope (%): Mean 25% Range 5% - 35% Aspect NW - NE

Geology: Weathered Granite ( ) Weathered Schist & Gneiss ( ) Glacial Drift ( )

Lacustrine Sediments ( ) Fine-Textured Alluvium (X)

Other mudstone, siltstone, limestone

Comments Area has limestone sinks

Vegetation [indicate dominant (D) and subdominant (S) stand composition]:

Upland Fir ( ) Pine (X) Cedar ( ) Hemlock ( ) Hardwood ( )

Other Lodgepole

Comments _____

Draw
~~Riparian~~ Coniferous (X) Hardwood ( ) Shrub ( ) Sedges/Grasses (X)

Other huckleberry

Comments _____

Compliance and Effectiveness

Name: Upper Dry Canyon Audit No: 9/21/04

BMP Compliance and Effectiveness Ratings (refer to scaling factors)

Forest Practices Act Rule	Rating Comp	Rating Effect	Comments
020.01. Compliance			
a.i. operator submitted variance request	N/A		
a.ii. IDL evaluated and notified	N/A		
a.iii. provided equal protection	N/A		
b. complied with all applicable rules	Y	3	
030.03. Soil Protection			
a. no skidding-caused rutting nor erosion 45% skidding limitation and notification	Y	6	minor sediment transport to dry draws
b. 30% skid trail limitation	N/A		no constructed skid trails
c. minimum skid trail width and number tractor size appropriate	Y	6	
d. no cable yarding rutting nor erosion	N/A		
030.04. Location of Landings and Trails			
a. stable location and outside SPZ trail sidecasting minimum	Y	6	no SPZ in sale area
b. minimum landing size	Y	6	
c. landing fill material and sidecast stable	N/A		
030.05. Drainage Systems			
a. trail drainage and stabilization current	Y	6	one active skid trail not waterbarred but will be (6;+6)
b. landing drainage and stabilization	Y	6	
030.06. Treatment of Waste Materials			
a. slash and debris out of Class I stream	N/A		no class I stream
b. slash and debris out of Class II stream	N/A		no class II stream
c. landings and trails waste outside SPZ	N/A		no SPZ in area
030.07. Stream Protection			
a. lake site-specific plan within SPZ	N/A		

Caribou/Targhee BMP Review

- Of the 24 Timber Sales Reviewed:
- 14 sales had GOOD Implementation and GOOD Effectiveness
- 8 sales had PARTIAL Implementation and GOOD to ADEQUATE Effectiveness
- 1 sale had FAIR Implementation and FAIR to ADEQUATE Effectiveness
- 1 sale had PARTIAL Implementation and POOR Effectiveness

Caribou/Targhee BMP Review

- Good Implementation – All NEPA listed BMPs were implemented; appropriate IFPA BMPs implemented
- Partial Implementation – All NEPA BMPs were implemented, but not all IFPA
- Fair Implementation – One or more NEPA and IFPA BMPs not implemented
- Good Effectiveness – No sediment in streams observed
- Adequate Effectiveness – Some sediment but no degradation of Beneficial Uses/aquatic habitat observed
- Fair Effectiveness – Some sediment and minor degradation of Beneficial Uses/aquatic habitat observed
- Poor Effectiveness – Beneficial Uses/aquatic habitat degraded

Caribou/Targhee BMP Review

Nounan	1990	Implementation – Partial Effectiveness – Adequate (Minor Sediment)
Brockman	1990	Implementation – Partial Effectiveness – Adequate
Overlook	1990	Implementation – Partial Effectiveness - Good

Caribou/Targhee BMP Review

Alder Flat	1992	Implementation – Partial Effectiveness – Poor (Road build adjacent to creek)
North Pebble	1996	Implementation – Partial Effectiveness – Adequate
Bloomington (Mariah)	1997/1998/ 1999/ 2000	Implementation – Fair Effectiveness – Fair (Wind blowdown)

Caribou/Targhee BMP Review

- Upper Dry Creek Unit 7 – 2004 – Cut 2003

Caribou/Targhee BMP Review

- Harvest Unit 5 – Unauthorized Dry Draw Xing

Caribou/Targhee BMP Review

- Sediment below ephemeral channel road xing

Caribou/Targhee BMP Review

- Rutted Skid Trail – Operations suspended by Sale Administrator

Caribou/Targhee BMP Review

- Miles Canyon landing site – 2003
- Ripped and seeded in fall 2003, slash burned 2004

Caribou/Targhee BMP Review

- Miles Canyon 2003

Caribou/Targhee BMP Review

- Beacon Basin – 2003

Caribou/Targhee BMP Review

- Beacon Basin – 2003

Caribou/Targhee BMP Review

Summary

- Of the 24 sales reviewed, the majority had good to partial implementation with good to adequate effectiveness.
- Only 1 sale was found to adversely effect water quality and aquatic resources.
  - Adverse effect was from road location/construction
- The greatest disturbance is from roads, skid trails and landings rather than the harvesting units themselves.

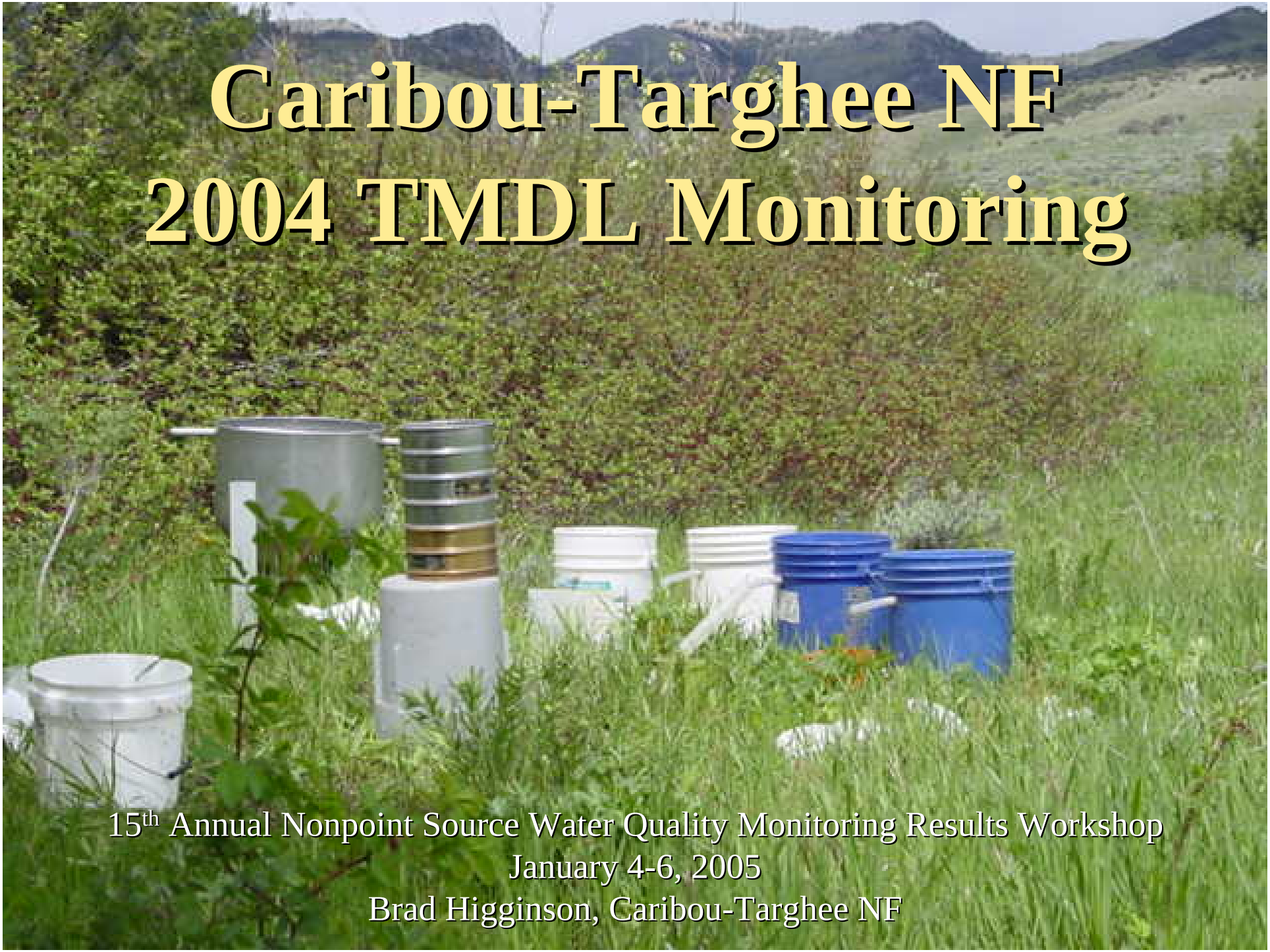
Caribou/Targhee BMP Review

Conclusion

- Where BMPs are appropriately identified and applied, affected resources are adequately protected.
- Problems can and have occurred when BMPs are either not applied as prescribed or inadequately implemented
- The BMP Review Process is working well on the Caribou/Targhee National Forest and will be continued on an annual basis.

Caribou/Targhee BMP Review

Caribou-Targhee NF
2004 TMDL Monitoring

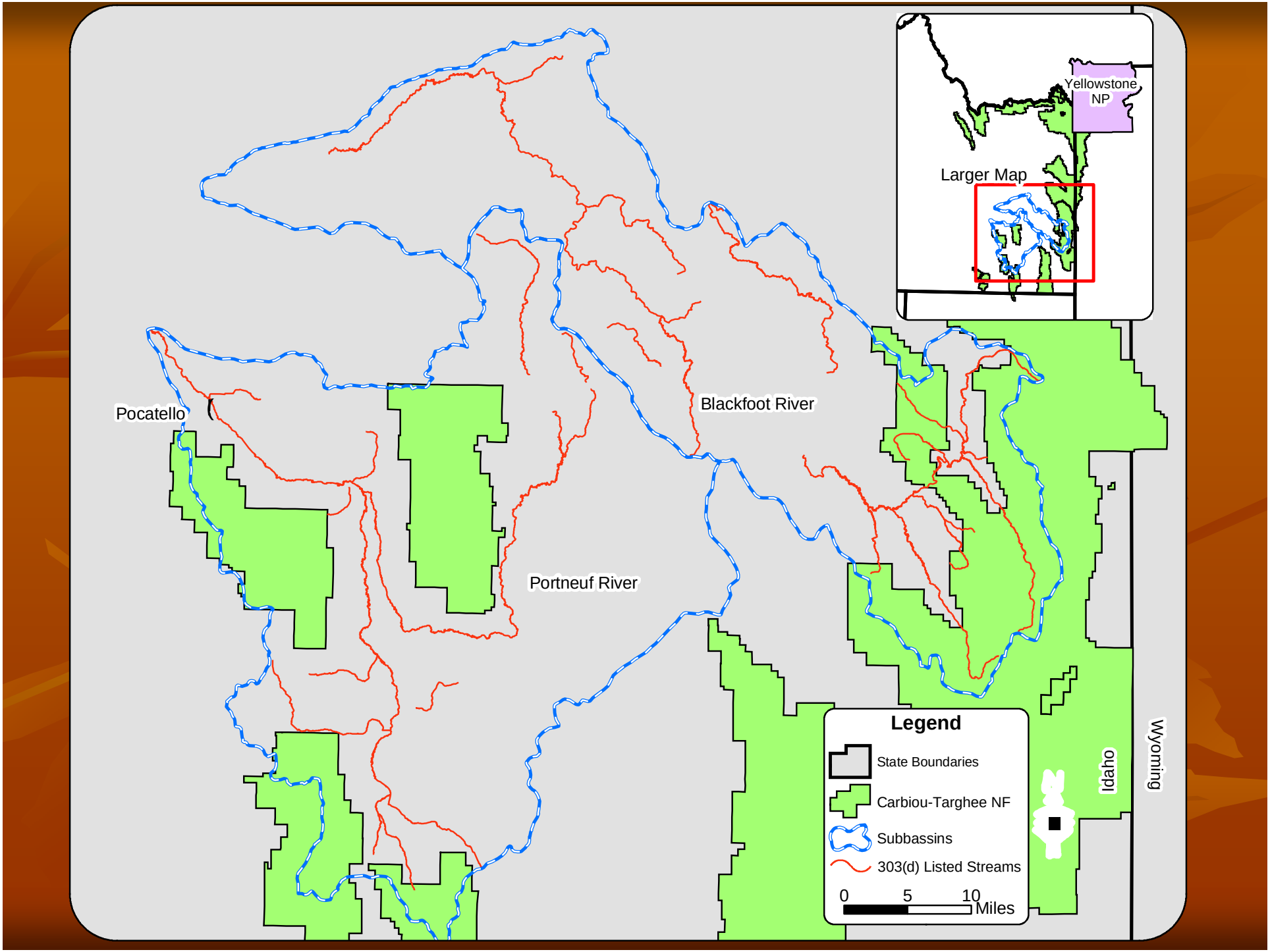


15th Annual Nonpoint Source Water Quality Monitoring Results Workshop
January 4-6, 2005
Brad Higginson, Caribou-Targhee NF

Subbasin Implementation Plans

- Portneuf River Subbasin

- Blackfoot River Subbasin


Yellowstone NP
Larger Map
Pocatello
Blackfoot River
Portneuf River
Idaho
Wyoming
Legend
State Boundaries
Carbiou-Targhee NF
Subbassins
303(d) Listed Streams
0
5
10
Miles

Portneuf River Subbasin

Waterbody	Pollutants	Monitoring
Mill Creek (Trib. to Birch)	Nutrients & Sediment	Suspended Sediment, Depth Fines, & Nutrient (N & P)
Cherry Creek		
South Fork Hawkins Creek	DO & Nutr.	
Walker Creek	Sediment	Suspended Sediment and Depth Fines

Portneuf River Subbasin Targets

- Suspended Sediment
  - High flows: ≤ 80 mg/l (14-day ave.)
  - Low flows: ≤ 50 mg/l (28-day ave.)
- Depth Fines
  - Sediment < 6.25 mm: ≤ 25% of substrate by volume
  - Sediment < 0.85 mm: ≤ 10% of substrate by volume
- Nutrient
  - N: Not to exceed 0.3 mg/l of N as total inorganic N
  - P: Not to exceed 0.075 mg/l of P as total P (may Δ to 0.05 mg/l)

Portneuf Results

Waterbody	Total Suspended Sediment (mg/l)	Depth Fines [25% (6.3 mm) & 10% (0.85 mm)]	Nutrient (mg/l) Total Inorganic N & Total as P (5/17/04 & 8/18/04)
Mill Creek (Trib. to Birch)	14 cfs = 8.7 2 cfs = 3.7	< 6.3 mm = 16% < 0.85 mm = 4%	N = 0.181 & < 0.01 P = 0.023 & 0.018
Cherry Creek	14 cfs = 21 2 cfs = 12	< 6.3 mm = 8% < 0.85 mm = 24%	N = < 0.066 & < 0.036 P = 0.035 & 0.043
South Fork Hawkins Creek	1cfs = 130 0.6 cfs = 14	< 6.3 mm = 62% < 0.85 mm = 27%	N = 0.025 & < 0.01 P = 0.124 & 0.075
Walker Creek	14 cfs = 26 0.3 cfs = 4.7	< 6.3 mm = 28% < 0.85 mm = 6%	N/A

South Fork Hawkins Creek

- Suspended sediment, depth fines, and phosphorus
- Downcut, non-functioning, with a slight upward trend
- Road closures in the mid 1980s (mixed recovery)
- Closed to grazing in 1995
- Limited grazing now allowed
- Wildfire in August 2000
- Bank Stability = 21% Stable

Walker Creek

- Livestock grazing
- Road parallels creek
- Recreation
- 42% Bank Disturbance

Blackfoot River Subbasin

Waterbody	Pollutants	Monitoring
Blackfoot River	Sediment & Organics	Depth Fines And Bank Stability
Maybe Canyon	Unknown	
Trail Creek	Sediment	
Slug Creek		
Angus Creek		
Lanes Creek		
Sheep Creek		
Diamond Creek		
Dry Valley Creek		DFs, BS, and Turbidity

Blackfoot River Subbasin Targets

- Depth Fines
  - Sediment < 6.25 mm: ≤ 25% of substrate by volume
  - Sediment < 0.85 mm: ≤ 10% of substrate by volume
- Bank Stability = 80% Stable Stream Banks
- Turbidity (Dry Valley Creek)
  - Above Mine: 40.55 NTU (high Q) & 24.23 NTU (low Q)
  - Below Mine: No net increase of 4.6 NTU and daily maximum not to exceed 20.15 NTU

Blackfoot Results – 1 of 2

Waterbody	Depth Fines	% Stable Bank
Blackfoot River	< 6.3 mm = 15% < 0.85 mm = 5%	89% Stable
Maybe Canyon	< 6.3 mm = 36% < 0.85 mm = 13%	69%
Trail Creek	< 6.3 mm = 76% < 0.85 mm = 39%	94% Stable
Slug Creek	Fines and Organics	72%, 69%, 100%, & 79%
Angus Creek	< 6.3 mm = 59% < 0.85 mm = 26%	65%, 85% , 88%, & 87%

Blackfoot Results – 2 of 2

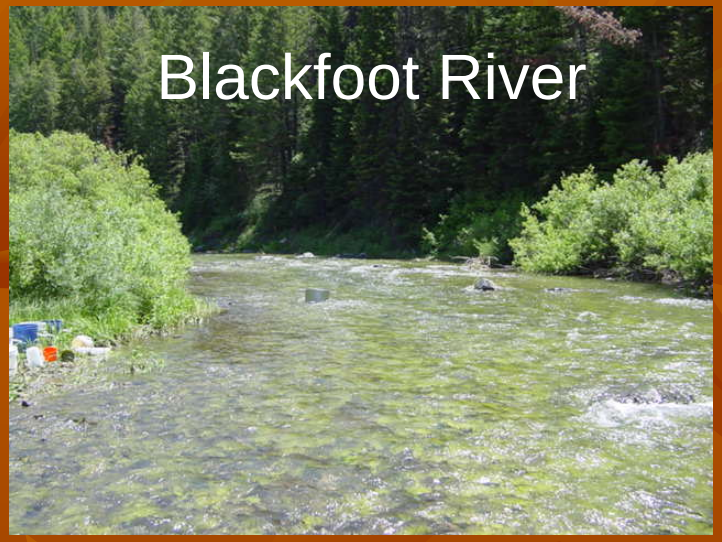
Waterbody	Depth Fines	% Stable Bank
Lanes Creek	< 6.3 mm = 16% < 0.85 mm = 4%	86% & 98%
Sheep Creek	< 6.3 mm = 32% < 0.85 mm = 9%	78% & 89%
Diamond Creek	< 6.3 mm = 38% < 0.85 mm = 14%	44%, 72%, & 88%
Dry Valley Creek	< 6.3 mm = 99.7% < 0.85 mm = 90%	58% Stable

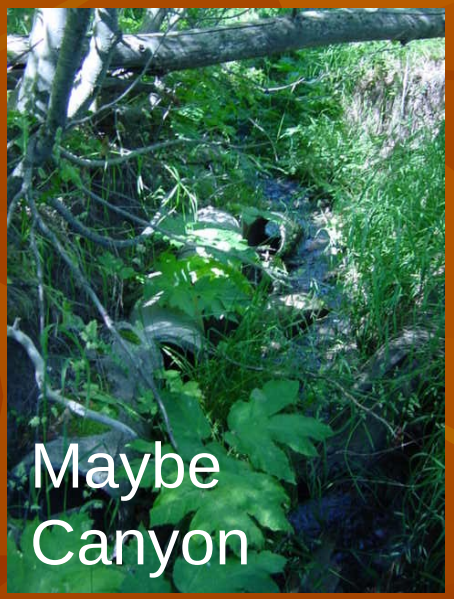
Dry Valley Creek Turbidity (5/26/04) = 1.14 NTU

Blackfoot Conclusions

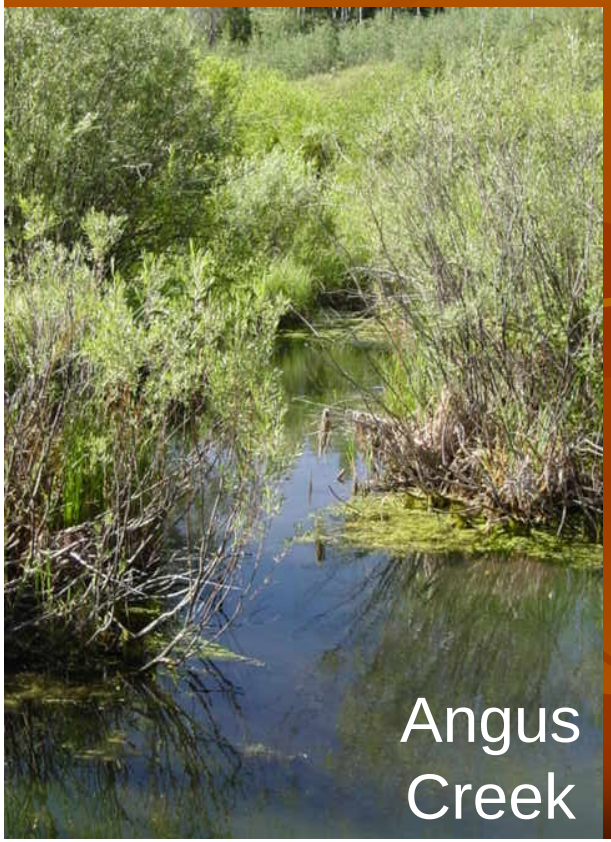
- Depth fines were monitored, but this is not an appropriate for several streams in the drainage
  - Lack of pool/riffle complexes
  - Fine grained valley bottoms
  - Beaver activity
- Where depth fines are used, refinement of targets could occur based on stream size
- Bank Stability is a function of livestock grazing, willow abundance, mining activity, and roading

Blackfoot Subbasin Streams where Depth Fines May Be Appropriate





Depth Fines are not Appropriate



Overall Conclusions

- Depth Fines is not an appropriate surrogate on several streams in the Blackfoot Subbasin
- Watershed improvement projects targeted at sediment reduction would benefit South Fork Hawkins Creek and Walker Creek
- Streambank protection/improvement projects and livestock management improvements would benefit several streams in the Blackfoot drainage


STOP
AHEAD
FART
COMPETITION